

Amendments to the Specification

Please replace paragraph [37] with the following amended paragraph:

[37] When the pressure forces on each end 76, 80 of the spool valve 40 are not in balance, the spool valve 40 will move in an axial direction 26, 28 of least resistance. For example, when the control fluid pressure is higher than the force applied by poppet 46, the spool valve 40 will move in the second axial direction 28, and will progressively close the supply port 58 and open the exhaust port 60. The effect of this motion will cause the pressure in the control chamber 10 to drop. To compensate, controller 6 may decrease current, which will cause armature 30 to move in the second axial direction 28, increase pressure in hydraulic assembly 14, and cause spool valve 40 to move in the first axial direction 26. As the spool valve 40 moves to the first axial direction ~~[[28]]~~ 26, the exhaust port 60 is increasingly closed and a supply port 58 is increasingly opened. In turn, the control fluid pressure increases.

Please replace paragraph [39] with the following amended paragraph:

[39] In another unique aspect, pressure sensor 16 position accommodates real time response without hindering, but increasing, accuracy of pressure readings. Desirably, the pressure sensor 16 should sense control fluid pressure away from a flow vortex created movement of spool valve 40. However, the position of the pressure sensor 16 needs to be positioned near spool valve 40 to sense the real-time dynamics of the systems. The position of pressure sensor 16 cannot disturb the system it is measuring. Such a disturbance (altering fluid flow) would cause errors in the measured pressure, which is a problem in conventional placement (Fig. 6). Further, it is undesirable to position the pressure sensor 16 ~~[[to]]~~ too far away from the system, as the signal generated by the pressure sensor 16 would be dampened thereby not giving a real time response.

Please replace paragraph [42] with the following amended paragraph:

[42] Fig. 5 depicts the spool valve moving from the first position 64 (Fig. 3) to the second position 66 (Fig. 4) and fluid disturbances caused by the movement of spool valve 36. As in Fig. 5, control fluid enters the cylindrical cavity 50, end cavity 75, and surrounds the spool valve 40. When the spool valve 40 moves in the second axial direction 28, progressively closing the supply port 58 and opening the exhaust port 60, a fluid disturbance 82 is created in peripheral cavity 68. This disturbance 82 is caused by the movement of spool valve 40, control fluid entering by way of the control port 56, exiting by way of the exhaust port 60, and flowing through feedback channel 74. Control fluid acting on the second end 76 of the spool valve 40 experiences minimal fluid disturbances, however, as there are only one entrance and exit via the feedback channel 74.

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Further, the control fluid contained by end cavity 75 corresponds to the pressure acting on and forcing the spool valve 40 in the second axial direction [[25]] 28. By placing the pressure sensor 16 in the stopper 54 at the second end of the cylindrical cavity 50, more accurate pressure readings may be obtained. The volume bounded by the spool and the second end of the cylindrical cavity is small, which also increases response time.

Please replace paragraph [43] with the following amended paragraph:

[43] Fig. 5 also depicts spool valve 40 moving in the opposite direction, *i.e.*, in the first axial direction 26. Fluid flows from end cavity 75 through the feedback channel 74, and into the peripheral cavity 68. Flow disturbance gradients 82 change. In this situation, the exhaust port 60 progressively closes, whereas the supply port 58 is progressively opened. Poppet valve 38 creates an over-pressure situation, forcing the spool valve 40 in the first axial direction 26, and creating significant control fluid disturbances, which are a result of progressively closing exhaust port 60 and movement of spool valve 40. Also, in this situation, control fluid flows through the feedback channel 74 in the second axial direction 28. However, the control fluid acting on the second end 76 of the spool valve does not experience significant disturbance. As a result, reciprocation of the spool valve 40 does not affect the control fluid acting on the second end 76 of the spool valve 50. Ideally, placement of the pressure transducer 16 can accurately sense the pressure of the fluid contained by the control chamber. Pressure readings may be affected by the waterhammer effect, *i.e.*, the spool being driven to the stop during the fill phase. The waterhammer effect causes a predictable spike which may be programmed to be ignored.